Ohio Farm Household
Longitudinal Study*

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Rates of Return to Farm Assets and Other Investments

This report summarizes the rates of return earned by Ohio farm operator households on their farm assets. It is the third in a series of reports that describe recent findings from the Ohio Farm Household Longitudinal Study. Since 1987, the study has been collecting data from a representative sample of Ohio farm households. This information about 1992 returns on Ohio farms is from our last round of interviews in winter, 1993. Information included here comparing long-term rates of return to farm real estate stocks, and bonds is from USDA, Ibbotson and Associates, and other sources.

Composition of Farm Household Assets

Assets averaged $413,000 per Ohio farm operator household on December 31, 1992 (Table 1). These asset values were based on respondent estimates of current market values for both their farm assets (real estate, equipment, livestock, feed and grain inventories, and other farm assets) and their non-farm assets (bank accounts, stocks, retirement funds, and so forth).

Households were grouped by the size of their farming operation. The smallest operations (less than $40,000 in annual gross sales) had the same proportion of farm real estate in their investment portfolios as did larger farms. But these smaller operations had a relatively small proportion of their capital invested in farm non-real estate assets such as livestock and equipment. These households with small farm operations, however, invested 22 percent of their assets off the farm (Table 1).

The value of the farm residence is included in farm real estate assets, and it might account for as much as one-third of farm real estate assets on small farm operations. While the proportion of farm household assets invested in farm real estate is nearly 60 percent across all farm sizes, the importance of house value on small farms reduces their investment share in productive farm real estate compared to larger farms.

Rates of Return to Farm Assets, 1992

Return on assets has two components: operating return and change in asset value. Returns on Ohio farm household assets, shown in Table 1, include only operating returns. Farm operators in this study were not asked to estimate changes in asset values, but probably this component of return on assets was near zero in 1992 (see Table 2).

The large number of households with small and part-time farming operations makes simple averages misleading. Most farms with the smallest farm operations (less than $40,000 annual gross sales) had low rates of return to assets in 1992 (Table 1). But there are so many small farms that the <u>average</u> for all

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farm households was a negative (-2 percent) rate of return. Commercial farms (more than $100,000 annual gross sales) by contrast, had an 11 percent operating rate of return. This lifted returns to the average dollar invested in farming to about 1 percent (Table 1).

Estimated operating returns for dairy, grain, and swine farms also appear in Table 1. To be included in one of these categories, the farm must have received more than 50 percent of its gross farm income from sales of that particular product. These farms tend to be large and specialized, yielding higher than average operating rates of return.

The estimated 11 percent operating rate of return for full-time commercial operations probably was comparable to rates earned in off-farm investments with relatively high levels of risk. If farms with less than $40,000 annual gross sales were excluded, 1992 operating returns to the average farm household were 5.9 percent, and operating returns for the average dollar invested were 8.5 percent.

Historic Rates of Return to Farm Real Estate

USDA calculates the annual rate of return to farm real estate, or the average return that owners of farm real estate receive from both the operating return and change in asset value. U.S. average rates of return for selected time periods are shown in Table 2. Ohio averages would be similar.

Average annual operating rates of returns were about 5 percent for each of these selected periods (Table 2). Over the last 50 years, the nominal dollar value of the operating returns grew due to inflation. However, this induced changes in asset values. Operating rates of return remained fairly constant. Asset value changes have been extremely varied. During 1941-46, farm real estate prices increased 75 percent. During the decade of the 1970s, they quadrupled. But during 1981-86 they dropped by almost 30 percent. Over the last 40 or 50 years, annual changes in farm real estate values have averaged about 6 percent. Adding the operating returns and the appreciation in asset values, farm real estate owners have received an average annual total return of about 11 percent (Table 2).

Over the long-term (but not recently) farm rates of return compare favorably to rates of return for common stock, and are higher than those for bonds (Table 3). In theory, investors are compensated for bearing risk. Investments with little income variability, like U.S. Treasury bills, should have relatively low rates of return. Those with high income variability, like common stocks, show high rates of return. In order to judge the adequacy of farm real estate returns, risk (return variability) needs to be considered. Even though farm real estate values have fluctuated, the variability of annual returns has been lower than for common stock or bonds. Thus, these long-term returns to farm real estate seem, on the average, to have compensated owners for their investment risks.

Concluding Comments

The average Ohio farm household lost money on its farm operation in 1992, as occurs in most years. But operating returns on commercial farms was relatively high in 1992, as in most years. As an investment over the long-term, farm real estate has compared favorably with investments in financial assets.

Table 1: Assets, Liabilities, and Annual Rates of Return for Ohio Farms, 1992

	Farm Size (1992 Gross Sales)			
	< 40,000	40,000 - 99,999	> 100,000	Average[1]
Assets ($000)	314.0	476.0	850.0	413.0
Liabilities ($00)	17.6	47.7	153.0	41.0
Composition of Assets	- - - - - - - - - - Percent - - - - - - - - - -			
- Farm Real Estate	59.0	57.0	59.0	58.7
- Farm, Non-Real Estate	19.0	29.0	36.0	25.6
- Non-Farm	22.0	14.0	5.0	15.7
	100.0	100.0	100.0	100.0
Average Rate of Operating Return on Assets				
- per household	-6.5	2.8	11.3	-2.0[1]
- per asset dollar	-	-	-	1.0[2]
Rate of Operating Return on Assets by Farm Type (%)[3]				
- Dairy	-	-	-	5.0[1]
- Swine	-	-	-	9.3[1]
- Grain	-	-	-	3.6[1]

[1] Operating return for average farm household. Change in value of assets is excluded.

[2] Operating return for capital invested in farm assets. Change in value of assets is excluded.

[3] Farms are classified as dairy, swine, or grain farms if more than 50 percent of gross farm income is attributable to those enterprises.

Table 2: Annual Rates of Return to U.S. Farm Real Estate, Selected Periods, 1942-1991

Period	Average Annual Returns to Farm Real Estate		
	Operating Return	Land Appreciation	Total Return
	- - - - - - - - - - Percent - - - - - - - - - -		
1991	5.29	0.59	5.87
1982-91	4.60	-1.82	2.74
1972-91	4.56	5.85	10.38
1942-91	5.04	6.17	11.17

Source: USDA and Ibbotson Associates.

Table 3: Annual Rates of Return to U.S. Investments, Selected Periods, 1942-1991.

Period	Farm Real Estate	Stock Index[1]	Long Term Corporate Bonds	Treasury Bills	Inflation[2]
	- - - - - - - - - - - Percent - - - - - - - - - - -				
1991	5.87	30.55	19.89	5.60	3.06
1982-91	2.74	17.59	16.27	7.65	3.91
1972-91	10.38	11.89	9.43	7.72	6.24
1942-91	11.17	12.85	7.28	6.63	5.21

[1] Standard & Poor's 500. [2] Annual change in Consumer Price Index.

Sources: USDA, RISI, Russell-NCREIF, Ibbotson, SEI, Morgan-Stanley.